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ANNUAL REPORT ON THE ROYAL BOTANIC GARDEN, FOR THE YEAR 1885-86.

No. 21G, dated Calcutta, the 14th May 1886.

From—Surgeon-Major George King, M.B., Superintendent, Royal Botanic Garden, Calcutta,

To—The Secretary to the Government of Bengal, Financial Department.

I have the honour herewith to submit the ninety-ninth Annual Report of the Royal Botanic Garden.

ANNUAL REPORT OF THE ROYAL BOTANIC GARDEN FOR THE YEAR 1885-86.

But little in the way of change has been effected during the year, and the energies of the establishment have been chiefly directed to keeping up as high a standard of cultivation and arrangement as possible amongst the plants in the conservatories and grounds. With the latter object the conservatories were to a large extent replanted, old and worn out plants being removed to make way for new and more vigorous specimens. The results even within the year have been very obvious, for the show of orchids during the last season was the finest we have had since I took charge of the gardens, and the general appearance of the plant-houses is, I think, better than it has ever before been. Many of the borders out of doors have been replanted, and a good deal of thinning and pruning have been effected amongst the trees. The garden buildings are in good order, the old house in which the office and seed establishments are located having been put into serviceable repair towards the end of the year by the Department Public Works. The river bank, which used to be a source of some anxiety, having, as reported by me last year, been ballasted by brick rubbish from Akra, is now in comparatively good order, and by a further small expenditure it should, I think, cease to be a source of trouble for some time to come. The pump established a year or two ago on the river bank for the purpose of keeping the water in the garden lakes at a high level has worked well. The number of visitors seem to me to be increasing, and were the garden entrance to be made a calling point for the passenger steamers that now ply on the river, the number would no doubt be still further increased.

Economic plants.

2. Through the kindness of Sir J. D. Hooker, of Kew, and of Mr. Morris, of the Botanic Department in Jamaica, an unusually large quantity of mahogany seed was sent to the garden during the year. Much of this was distributed; and the remainder having been sown in the nurseries, germinated so successfully that there are now ready for issue about 20,000 healthy young seedlings. Besides these mahoganies, many seedling timber trees of useful sorts have been prepared for distribution, so that the efforts of the Agricultural Department to promote arboriculture in the Province may be facilitated so far as the garden resources permit. In former reports I referred to the paper mulberry which supplies the material from which the *tappa* cloth of Polynesia and the bulk of the paper of China and Japan are manufactured, and I expressed a hope that this tree may one day be commonly grown in the odd scraps of ground which are so numerous round the villages of Bengal. I am glad to say that a year's further experience confirms me in the belief that the tree is perfectly at home in this part of the country, and that there is no reason why this hope should not be ultimately fulfilled. Our oldest trees (now about four years old) are thirty feet high: they yield seed freely, and send up numerous shoots from their roots, provided the latter be cut under ground by the free use of the hoe in the neighbourhood of the tree. The Japanese cultivate the plant very much in the same way that osiers are grown in England, and for paper manufacture they use only the young shoots. This is a kind of cultivation especially suited for waste nooks and corners in Bengal. And as the bark has been pronounced by English paper-makers to be nearly, if not

quite, the best of paper fibres, the cultivation seems to offer encouraging prospects. The bark is of a very white colour; it yields about 58 per cent. of bleached fibre, and requires very little bleaching. The utilisation of the fibre of the common plantain, to which I had in former years directed some attention, seems at last to have been brought within the range of possibility by the invention, by a retired officer of the Madras Army, of a simple, portable, and withal very simple machine. This machine is now being patented, and, if it answers as well as it appears to promise, a great step will have been gained in turning to account an immense amount of useful fibre which is at present hopelessly wasted. A small supply of the tubers of an eatable umbelliferous plant, named *Arracacha esculenta*, were sent to this garden from Kew two years ago. As the climate of Calcutta was considered unsuitable for their cultivation, these tubers were sent to Mungpoo, where, under Mr. Gammie's care, some of them are now thriving well. As the tubers are still few in number and too precious to be sacrificed for food, I have not tasted this new vegetable. In Jamaica, where it is common, they are described as resembling a parsnip in flavour, and as acquiring a weight of from 8 to 10 pounds in less than a year. The cultivation and distribution of coca, rheea, and other economic plants has received attention during the year.

Herbarium.

3. The herbarium has been materially increased during the year by the receipt of various important contributions. Chief among these is the series of specimens of Malayan plants collected by Mr. H. H. Kunstler, the specimens being, as usual, well-dried and in excellent order. From the higher regions of the Eastern Himalaya, a considerable number of rare plants were brought by Mr. Pantling and by native collectors in the pay of the garden. Mr. Duthie, of the Saharanpur Botanic Garden, contributed an interesting series of specimens collected by him in the higher parts of the Kumaun Himalaya. From the forests of the northern part of the Madras Presidency, Mr. J. S. Gamble sent some most valuable specimens, as did Mr. C. B. Clarke and Mr. G. Mann from Assam and the Khassia Hills. M. Boissier, a distinguished European botanist, presented some sets of European and African species, and Sir Joseph Hooker, of Kew, presented his final contribution from the Gay collection. To forest officers in various parts of the country the herbarium is indebted for many interesting specimens of rare or little known trees. Amongst these, the contributions of Mr. Talbot, Deputy Conservator of the Canara forests, and Mr. R. Ellis, Deputy Conservator of the Chittagong Hill Tracts, have been the most interesting. Baron Von Mueller, of Melbourne, who has for years been a steady contributor to this herbarium, has this year again continued his generous donations. From Professor Engler, of Breslau, were received a fine set of named *Aroideæ*—a difficult order in which he is leading authority. Dr. T Cooke, of the Science College, Poona, sent a fine series of specimens illustrating the flora of Mahableshwar. Dr. Giles, the naturalist with the Gilgit Expedition, has sent at several times sets of most interesting plants from that remote and little-known region of the Himalaya. From Dr. Treub, Director of the Botanic Garden, Buitenzorg, Java, were received a suit of specimens of *Sapotaceæ* named by Dr. Burck, who has recently published a monograph of the family. To Mr. Curtis, of the Penang Forest Service; Mr. Hullett, of the Raffles Institute, Singapore; Revd. Mr. Campbell, of the Scotch Mission in Manbhoom; and Major Sedgewick, R.E., the herbarium is also indebted for interesting contributions.

Interchange of plants and seeds.

4. The issue of plants for the year reached the high figure of 53,752. This is considerably in excess of the number distributed in former years. The increase is chiefly due to the fact that 20,000 plants of rheea were given to two commercial firms who were anxious to give the cultivation of this valuable fibre-yielder a trial. The remaining 33,000 plants were given, as will be seen by a reference to the appended distribution list, chiefly to public institutions in this country and abroad. On the other hand, 9,251 plants were received. Packets of seeds to the number of 3,292 were distributed to recipients of the same sort; and 914 packets were received. The gentlemen to whom the garden is chiefly indebted for contributions are Sir J. D. Hooker and Mr. Thiselton Dyer, of the Kew Garden; the Directors of the Botanic Gardens

of St. Petersburgh, Hongkong, Natal, Demerara, Adelaide, and Java; the Superintendents of the Gardens at Saharanpur and Poona; Messrs. Veitch and Bull, Nurserymen, London; Mr. J. S. Gamble and the officers subordinate to him in the Forest Department of the Madras Presidency; Colonel T. Cadell, V.C., and Mr. G. H. Man, Andamans; Mr. Barton Groves and Colonel Berkeley, Rangoon; Colonel Perreau, Calcutta; Mr. Maries, Durbhunga; and Mr. Ridley, Lucknow. I have also to thank the officers of the cinchona establishment—Messrs. Gammie, Pantling and Parks—for many orchids sent down from Sikkim. A large number of plants were also received in excellent order from Mr. H. H. Kunstler, Perak.

Collecting Expeditions.

5. Government having decided to send an expedition to Lhassa, and Dr. D. D. Cunningham, of the Bengal Medical Service, having been appointed to accompany it in the capacity of Botanist, Meteorologist, and Naturalist, I have fitted out Dr. Cunningham with collecting materials, and have supplied him with experienced native collectors. As Europeans have hitherto been rigorously prevented from crossing the passess into Eastern Thibet, the botany of the route to Lhassa is but imperfectly known, and Dr. Cunningham's collections cannot fail to be most interesting. A native collector has been employed during the greater part of the year in the Chittagong Hill Tracts, and I intend to retain him there for some time to come.

Lloyd Botanic Garden, Darjeeling.

6. The Lloyd Botanic Garden at Darjeeling is slowly recovering from the ravages of the hosts of cockchaffer grubs which killed almost everything in it except the larger trees. It is to be hoped that this dreadful pest has now finally been got rid of. But, as there are a good many of the same kind of grubs in private gardens in the station, I am by no means confident on the point. The vines in the conservatory yielded a few bunches of grapes during the year. But owing, no doubt, to the absence of sufficiently bright sunlight during the rainy season, the fruit was rather small and sour. I fear the Eastern Himalaya is pretty nearly hopeless as a home for any European fruit except the strawberry, and the success of even that is not much to boast of. There is now an excellent road leading from near the lower entrance to the convent, along the side of the sanitarium hill, into the garden. The necessity of passing through the bazar in order to reach the garden is now therefore obviated. The slopes of the sanitarium hill have now become consolidated, and they are beginning to be well covered with grass, and as the trees which have been planted on them grow up, the whole hill should become a great ornament to the station The only thing which appears likely to interfere with this desirable result is the possible erection of a native bazar, or of dhobies' washing tanks, on the three-acre plot of ground belonging to the municipality which is wedged in on the eastern slope between the grounds of the sanitarium and the Botanic Garden. This bit of ground used to be worked as a vegetable garden, but, as has been explained in previous reports, it was for some years a financial failure on account of landslips caused by the building operations connected with the sanitarium. These building operations have long since ceased, and there is no reason now to fear the destruction of the vegetable crop by landslips. I have therefore been in communication with the municipality for the resumption of vegetable growing by the Curator, but hitherto without entire success. The acclimatised potatoes, raised from some of the best English kinds, were freely distributed from the garden some years ago, and the benefit of this proceeding is now being realised in the marked improvement of the quality of the potatoes brought to the public market for sale.

7. The budget allotment of the Calcutta garden for the year was Rs. 69,870, which was all expended. The sum of Rs. 1,091-12 realised from the sale of surplus plants, grass, &c., was paid into the treasury as revenue, being less than the estimate by Rs. 308-4. As has been explained in former reports, the garden is not worked for revenue; only surplus plants being sold and care being taken not to interfere with the operations of private nurserymen who have to live by their business. The expenditure on the Lloyd Botanic Garden at Darjeeling for the year amounted to Rs. 7,372, being Rs. 1,107 below the original estimate; while the sales of surplus plants produced the sum of Rs. 741, which was paid into the Government treasury. The sales were in excess of the estimated revenue by Rs. 441.

8. Several changes took place in the European staff during the year. Mr. Jaffrey, who had been Curator of the Lloyd Botanic Garden since its beginning, died suddenly of heart disease in November. Mr. Jaffrey was an excellent gardener, and was devoted to his work, while his obliging and courteous disposition had made him a general favourite in the station. Mr. Jaffrey's place was filled by the transfer of Mr. W. Kennedy from the Cinchona Plantation. Mr. G. Urquhart, Curator of the Calcutta garden, having retired from the service of Government during the year, Mr. Halfdan Bahr was made Curator in his stead—a piece of thoroughly well-deserved promotion. Mr. L. J. K. Brace, Curator of the Herbarium, was absent on sick leave during half the year, and his place was temporarily filled by Dr. D. Prain, a young officer of the medical service, who possesses an excellent knowledge of botany, together with much energy and enthusiasm.

9. The usual returns, four in number, are appended.

APPENDIX I.

Statement showing plants received from 1st April 1885 to 31st March 1886.

From whom received.	Wardian cases.	Boxes.	Number of plants.
Royal Garden, Kew, London	2	2	167
Government Botanic Garden, Saharanpur	.....	1	454
Botanic Garden, George Town, Demerara	1	.....	11
Ditto, Natal	1	1	72
Ditto, Jamaica	.....	.....	181
Ditto, Hong-Kong	3	.....	71
Ditto, Java	1	.....	67
Ditto, Gunesh Khind, Poona	.....	4	36
Lloyd Botanic Garden, Darjeeling	.....	4	918
Agri-Horticultural Society, Calcutta	.....	.....	99
Eden Garden, ditto	.....	.....	18
Zoological Garden, ditto	.....	.....	24
W. Bull, Esq., New Plant Merchant, London	1	1	91
Messrs. James Veitch and Sons, Chelsea, London ...	1	1	79
J. Gammie, Esq., Government Cinchona Plantation, Mungpoo	.....	16	679
S. T. Apcar, Esq., Garden Reach	.....	.....	5
T. C. Anderson, Esq., Ceylon	.....	.....	127
Colonel E. Berkeley, Rangoon	.....	1	122
Sir E. Bradford, Rajputana	.....	...	2
H. G. Batten, Esq., Rangoon	.....	1	79
G. Bartlett, Esq, Calcutta	.....	.....	2
Dr. D. D. Cunningham, Calcutta	.....	.....	85
C. Curtis, Esq., Penang	1	.....	20
Colonel T. Cadell, v.c., Andamans	5	.....	753
J. S. Gamble, Esq., Madras	3	2	90
J. Barton Groves, Esq., Rangoon	.....	3	302
P. Hordern, Esq., ditto	.....	2	79
A. O Hume, Esq., c.b., Simla	.....	.....	163
Miss E Harwood, Calcutta	.....	.....	225
Colonel Jarrett, ditto	.....	.....	46
W. Kilby, Esq., ditto	.....	2	34
E. H. Man, Esq, Andamans	1	3	210
C. Maries, Esq., Durbhunga Raj Garden	.....	5	222
R. M. S. Mitchell, Esq., Garden Reach	.....	.....	24
Colonel Perreau, Calcutta	.....	.....	184
W. Pigott, Esq., ditto	.....	.....	7
G. McD. Peche, Esq., Moulmein	1	1	208
Dr. J. G. Pilcher, Howrah	.....	.....	13
R. Pantling, Esq., Mungpoo	.....	1	56
J. Parkes, Esq., Sikkim	.....	3	526
M. Ridley, Esq., Lucknow	.....	4	124
A. Simson, Esq., Calcutta	.....	.....	1
Messrs Schœne, Kilburn & Co., Calcutta	.....	3	169
Colonel Talbot	.....	1	3
Dr. G. Watt, Calcutta	.....	.....	16
Collected by the Superintendent in Darjeeling	.....	2	170
Ditto Herr H. H. Kunstler, Penang	17	10	1,030
Ditto Badal Khan, Plant Collector, Chittagong ..	.....	.....	4
Babu P. C. Sein, Seebpore	.....	.....	8
Horee Mally, Nurseryman, Manicktollah	.....	.....	1,155
Essan ditto, ditto	.....	.....	20
Total ...	38	74	9,251

APPENDIX II.

Statement showing plants sent out from 1st April 1885 to 31st March 1886.

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Government House Garden, Calcutta	.....	.....	275
His Imperial Majesty the Sultan of Turkey	20	.....	648
Royal Garden, Kew, London	5	.....	301
Do. Botanic Garden, Ceylon	1	1	99
Botanic Garden, Hong-Kong	3	.....	300
Ditto, George Town, Demerara	1	.....	21
Ditto, Durban, Natal	4	.....	98
Ditto, Adelaide	.....	1	27
Ditto, Java	1	1	92
Ditto, Jamaica	1	1	299
Ditto, Mauritius	1	.....	350
Ditto, Melbourne	.....	1	171
Ditto, Hull, England	.....	1	88
Government Botanic Garden, Saharanpur	.....	1	2
Compagnie Continentale d'Horticulture, Ghent	1	1	154
Lloyd Botanic Garden, Darjeeling	.....	4	259
Belvedere Garden, Calcutta	.....	.....	20
Eden Garden, ditto	.....	.....	8
Zoological Garden, Calcutta	.....	.....	345
Agri-Horticultural Society's Garden	.....	2	261
Horticultural Garden, Lucknow	.....	9	93
Government Agri-Horticultural Garden, Lahore	.....	4	93
Public Garden, Ajmere	.....	13	261
York Exotic Nursery, Kew, Melbourne	.....	1	161
W. Bull, Esq., Chelsea, London	3	.....	196
M. Louis Van Houtte, Ghent	.....	1	82
J. P. Norrish, Esq., H. B. M.'s Consul, Port Said	1	.....	30
Lord Egerton, of Tatton, Cheshire	1	.....	2
M. T. A. Despessiez, Mauritius	1	.....	100
General Hyde, London	.....	1	49
Messrs. Palmer and Son, Queensland	1	.....	55
Deputy Conservator of Forests, Chittagong	.....	14	225
Assistant Superintendent of Forests, Penang	2	.....	144
Director of Agriculture, Assam	.....	3	44
Magistrate of Chittagong	.....	8	72
Ditto, Bankipore	.....	7	150
Cantonment Magistrate, Dum-Dum	.....	.....	75
Ditto, Barrackpore	.....	.....	200
Commissary of Ordnance, Calcutta	.....	.....	436
Secretary to the Pegu Municipality	.....	8	154
Ditto and Engineer, Akyab Municipality	.....	6	54
Suburban Municipality, Alipore	.....	.....	1,000
Executive Engineer, Calcutta Workshop Division	.....	.....	49
Ditto, Pegu	.....	16	300
High School, Dhubri	.....	4	49
Government High School, Rangoon	.....	1	33
Ditto School, Taki	.....	.....	282
Military Orphanage, Khidderpore	.....	.....	150
Zenana Mission Church, Calcutta	.....	.....	50
Augarparah Orphanage and the Church of England Zenana Mission.	.....	.....	100
C. M. S. Mission House, Krisnaghur	.....	5	100
Barrackpore Cemetery	.....	.....	200
Principal, Ravenshaw College, Cuttack	.....	9	91
General Hospital, Calcutta	.....	.....	18
Medical College Hospital, ditto	.....	.....	173
Mayo Native Hospital, ditto	.....	.....	30
Postmaster-General, ditto	.....	2	64
Manager of Baron's Tea Estate, Jalpaiguri	.....	1	42
Sub-Deputy Opium Agent, Sarun	.....	1	6
Engineer-in-Chief, East Indian Railway, Howrah	.....	.....	4,207
Chief Engineer, East Indian Railway, Calcutta	.....	.....	12
Ditto, Dacca, Mymensing and Chittagong State Railway.	.....	8	192

APPENDIX II—*continued.*

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Chief Engineer, Eastern Bengal State Railway, Calcutta ...	.....	.....	2,069
Assistant District Traffic Superintendent, East Indian Railway, Howrah.	.....	.....	24
Superintendent, Small Arms Ammunition Factory ...	.....	.....	471
Ditto, Gunpowder Factory, Ishapur	.....	.....	140
Ditto of Jails, Burdwan	.....	1	50
Ditto ditto, Jessore	.....	11	220
Ditto ditto, Buxar Circle	.....	1	36
Ditto Central Jail, Midnapore	.....	6	170
District Superintendent of Police, Ramporehaut	.....	1	22
Ditto ditto, Rungpore	.....	1	20
Superintendent, Burrakar Iron Works	.....	4	90
Vice-Chairman of Port Commissioners, Calcutta	.....	.....	500
Collector of Monghyr	.....	7	110
Ditto of Hooghly	.....	.....	10
Superintendent, Customs Preventive Service, Sulkea ...	.....	.....	200
Sub-divisional Officer, Perozepur	.....	9	180
Superintendent, Durbhunga Raj Garden	.....	35	4,498
Civil Surgeon, Howrah	.....	.....	100
Deputy Surgeon-General, Nagpur	.....	1	30
Officiating Master of the Mint, Calcutta	.....	.....	30
E. T. Atkinson, Esq., Calcutta	.....	.....	201
A. Apcar, Esq., Calcutta	.....	.....	7
A. A. Apcar, Esq., Calcutta	.....	3	53
Mrs. S. T. Apcar, Garden Reach	.....	2	293
T. C. Anderson, Esq , Ceylon	2	.....	85
Rev. O. Berg, Ramporehaut	.....	5	89
G. Bartlett, Esq., Calcutta	.....	1	74
F. B Baker, Esq., Siliguri	.....	5	100
T. G. Burnell, Esq., Chittagong	.....	5	100
J. Ballin, Esq., Seebpore	.....	.....	4
Colonel E. Berkely, Rangoon	.....	1	33
Lady Bradford, Rajputana	.....	2	29
Mrs. Boerresen, Ramporehaut	.....	3	78
Colonel T. Cadell,, v.c., Andamans	5	.....	284
Revd. A. Campbell, Jamtara	.....	4	100
Hon'ble H. A. Cockerell, Calcutta	.....	.....	7
J. Cleghorn, Esq., Akra	.....	.....	450
A. Dowling, Esq., Chittagong	.....	19	420
W. Dover, Esq., Balasore	.....	1	25
G. H. P. Douglas, Esq., Fenchugunj	.....	5	92
Mrs. Fletcher, Poona	.....	2	41
,, Fraser, Calcutta	.....	1	12
H. A. Gantzer, Esq., Howrah	.....	.....	1
J. H. Gilliland, Esq., Government Engineering College, Seebpore.	.....	.....	76
Mr. Grant, Balasore	.....	8	146
Captain Hughes, S. S. *Panmure*	1	.....	42
Revd. C. S. Harington, Calcutta	.....	.....	50
J. C. Hooper, Esq.	.....	.....	4
W. H. Hardinge, Esq., Howrah	.....	.....	34
Miss. E. Harwood, Calcutta	.....	.....	118
S. J. Kilby; Esq.	.....	.....	4
C. Kane, Esq., Assam	.....	8	200
Revd. W. Kitchin, Howrah	.....	.....	100
,, W. Kiefel, Giridi	.....	4	41
J. A. Langlois, Esq., Calcutta	.....	.....	2,000
F. A. Larmour, Esq., ditto	.....	.....	32
R. Lea, Esq., Dibrugarh	.....	1	20
Gordon Leith, Esq., Calcutta	.....	.....	1
Rev. A. L. Mitchell, Howrah	.....	2	44
Surgeon-Major Morphew, Cawnpore	.....	2	43
E. H. Man, Esq., Andamans	1	.....	25
Colonel May, Gorakhpoor	.....	3	60
Revd. J. McDonald, Dum-Dum	.....	.....	150

PART II—*continued.*

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Captain C. M. Muir, H. E. the Viceroy's Body-guard ...	.....	3	68
Mrs. Morris, England	.....	1	51
G. Norman, Esq., Calcutta	.....	.....	4
A. O. Hume, Esq., C.B., Simla	.....	6	111
J. Owen, Esq., Alipore	.....	.....	305
Dr. J. G. Pilcher, Howrah	.....	13	296
J. C. Pottinger, Esq., Ahmednugger	.....	1	1
R. Pantling, Esq, Mungpoo	.....	1	81
G. McD. Peche, Esq., Moulmein	1	1	45
Colonel Perreau, Calcutta	.....	.....	38
A. Palmer, Esq., ditto	.....	.....	3
Sergeant Peck, Fort William	.....	.....	20
W. Pigott, Esq., Calcutta	.....	.....	10
Revd. A. Pastor	.....	.....	6
„ A. C. Rodrigues, Calcutta	.....	.....	50
Mrs. John Rose, Calcutta	.....	.....	4
Captain Stiffe, Calcutta	.....	.....	20
J. S. Slater, Government Engineering College, Seebpore ...	.....	.....	73
Captain Symons, S. S. *Pekin*	.....	1	360
A. Simson, Esq., Calcutta	.....	.....	57
T. Steward, Esq., ditto	.....	.....	2
Rev. B. H. Scortichini, Penang	2	.....	66
W. M. Smith, Esq., Baidyanath	.....	4	93
Mrs. L. Spencer, Rajputana	.....	1	45
Miss Stephen, Calcutta	.....	.....	13
„ M. W. Sugden, Nischindeepur	.....	5	100
J. Thomson, Esq., Melbourne	1	5	220
Colonel A. C. Toker, Alipore	.....	.....	658
C. F. Tonnerre, Esq., Ramporehaut	.....	7	92
H. Wood, Esq., Calcutta	.....	.....	7
C. F. Warner, Esq., Calcutta	.....	.....	1
Colonel D. Ward, Simla	.....	1	104
Miss Wheeler, Calcutta	.....	.....	10
A. Yule, Esq., Metiabrooj	.....	.....	6
H. D. Yule, Esq., Garden Reach	.....	.....	24
G. H. Tilly, Esq., Giridi	.....	7	80
James Sutherland, Esq., Calcutta	.....	.....	110
Messrs. Finlay, Muir & Co.	.....	5	30
„ Gladstone, Wyllie & Co.	.....	.....	½ maund of rhea stems.
„ Gillanders, Arbuthnot & Co.	.....	3	5,000
„ Birkmyre Brothers, Hastings Mill, Serampore ...	.....	.....	15,036 and 4 maunds of rhea stems.
Manager of Paper Mill, Tittagurh	.....	.....	12
Sooruj Deo Narayan Sing, Balegurh	.....	5	106
Sham Lall Lalla, Calcutta	.....	21	600
Baboo P. C. Sein, Seebpore	.....	.....	11
„ D. N. Basu, Calcutta	.....	.....	3
„ Chutto Lall Misra, Burdwan	.....	.....	1
„ S. P. Chatterjee, Calcutta	.....	.....	175
„ A. M. Mookerjee, Calcutta	.....	.....	1
„ B. G. Mullick, Calcutta	.....	.....	11
„ B. Ghose, Calcutta	.....	.....	1
„ B. C. Sein, Calcutta	.....	.....	200
„ B. N. Sing, Dum-Dum	.....	.....	8
„ B. B. P. Chowdhuri, Natudey	.....	.....	16
„ B. M. Chatterjee, Calcutta	.....	.....	4
„ D. Malleah, Raneegunj	.....	8	178
„ D. C. Bose, Calcutta	.....	.....	214
„ G. C. Mookerjee Calcutta	.....	.....	18
„ G. M. Dutta, ditto	.....	.....	5

APPENDIX II—*concluded.*

To whom sent.	Wardian cases.	Boxes.	Number of plants.
Baboo H. C. Chatterjee, Rangoon	.....	.....	8
„ H. M. Mookerjee, Seebpore	.....	.....	2
„ H. C. Roy, Shillong	.....	.....	43
„ J. C. Biswas, Calcutta	.....	.....	53
„ J. N. Roy, Burdwan	.....	.....	50
„ J. Banerjee, Serampore	.....	.....	8
„ K. L. Sing, Nuddea	.....	.....	22
„ K. P. Janab, Daro	.....	.....	1
„ K. P. R Chowdhuri, Seebpore	.....	.....	48
„ N. C. Mookerjee, ditto	.....	.....	100
„ P. Maity, Nazirgunj	.....	.....	4
„ P. C. Roy, Calcutta	.....	.....	5
„ P. K. Chowdhuri, Horipal	.....	.....	3
„ R. M. Sett, Calcutta	.....	.....	2
„ R. C. R. Chowdhuri, Seebpore	.....	.....	2
„ R. Malleah, Howrah	.....	.....	16
„ R. M. Dass, Rungpore	.....	.....	11
„ S. C. Shaw, Horipal	.....	.....	3
„ T. N. Banerjee, Calcutta	.....	.....	20
„ T. D. Banerjee, ditto	.....	.....	5
Sadhu Santra, Andool	.....	.....	1
Horee Mally, Nurseryman, Manicktollah	.....	.....	14
Essan, ditto ditto	.....	.....	22
M. N. Mehta, Calcutta	.....	.....	23
Kazee Golam Mohammed, Metiabrooj	.....	.....	8
Kazee Mohammed Kunjee, Calcutta	.....	.....	1
Meerza Mohamed Hossein, Metiabrooj	.....	.....	6
Shaik Nowab Jan, Burdwan	.....	.....	1
Native Ladies of the Calcutta Medical College	.....	.....	24
Total ...	60	399	53,753

APPENDIX III.

Statement of seeds received from 1st April 1885 to 31st March 1886

From whom received.	Number of parcels or packets.
Sir J. D. Hooker, K.C.S.I., C.B., F.R.S., &c., Director, Royal Garden, Kew, London	13
Dr. Regal, Imperial Garden, St. Petersburgh, Russia ...	240
Botanic Garden, Jamaica	4
Ditto, Natal, Africa	23
Ditto, Hong-Kong	4
Ditto, Demerara	1
Ditto, Tasmania	23
Ditto, Adelaide	51
Ditto, Saharanpur	35
Ditto, Darjeeling	51
Sir Ferdinand Von Muller, F.R.S., Melbourne, Australia ...	8
William Bull, Esq., F.L S., Chelsea	1
Messrs. Haage and Schmidt, Erfurt	2
Secretary to the Agri-Horticultural Society of India ...	1
Officiating Secretary to the Chief Commissioner, Rangoon ...	1
Superintendent, Horticultural Garden, Lucknow	48
Ditto, Government Experimental Farm, Cawnpore ...	1
Ditto, Public Park, Baroda	1
Deputy Conservator of Forests, Cuddapah, Madras ...	14
Ditto, Kanara, Bombay	1
Ditto, Rangamati, Chittagong	1
District Forest Officer, Godavary District	1
C. Curtis, Esq., Forest Department, Penang	2
Herr H. H. Kunstler, Perak, Penang	1
E. H. Man, Esq., Port Blair, Andamans	108
J. Gammie, Esq., Mungpoo, Darjeeling	9
R. Pantling, Esq., Mungpoo, ditto	63
J. L. Lister, Esq., Kalimpong, ditto	10
C. Maries, Esq., Superintendent of Gardens, Raj Durbhunga ...	1
W. M. Smith, Esq., Baidyanath	2
G. J. Nicholls, Esq., C.S., Ghazipore	2
Dr. George King	29
,, D. D. Cunningham, Calcutta	2
Colonel Perreau, ditto	1
A. W. Solomon, Esq., ditto	1
Messrs. Stanley, Price & Co., ditto	15
,, Begg, Dunlop & Company, Calcutta	2
A. Aitkin Higgins, Esq., Calcutta	25
Badal Khan, Plant Collector	82
Babu Bissumbhur Ghosh, Seebpore	33
Rai Prossonno Kumar Bannerjee, Bahadur, Calcutta ...	1
Total ...	914

APPENDIX IV.

Statement showing seeds distributed from the Royal Botanic Garden during the year 1885-86.

To whom sent.	Number of parcels or packets.
Sir J. D. Hooker, K.C.S.I., C.B., F.R.S., &c., Director, Royal Garden, Kew, London	178
Dr. Regel, Imperial Garden, St. Petersburgh, Russia ...	69
Botanic Garden, Edinburgh	68
Ditto, Cambridge, England	44
Ditto, Christiana	30
Ditto, Hobart Town, Tasmania	6
Ditto, Brisbane, Queensland	2
Ditto, Utrecht, Holland	29
Ditto, Leiden, ditto	18
Ditto, Buitenzorg, Java	4
Ditto, Hong-Kong, China	4
Ditto, Gordon Town, Jamaica	3
Ditto, Singapore	2
Ditto, Peradeniya, Ceylon	5
Ditto, Gunesh Khind, Poona	301
Ditto, Saharanpur	31
Ditto, Darjeeling	231
Director, Compagnie Continental d'Horticulture, Ghent ...	17
M. Max Leichtlin, Baden-Baden	38
Secretary to the Acclimatization Society, Brisbane, Queensland	6
Ditto Agri-Horticultural Society, Madras ...	5
Ditto ditto of India, Calcutta ...	6
Superintendent, Horticultural Garden, Lucknow	23
William Bull, Esq., F.L.S., Chelsa	14
Messrs. James Veitch and Sons, Chelsea	9
„ Haage and Schmidt, Erfurt	2
„ G. Brunning and Son, Melbourne	1
Sir Ferdinand Von Muller, F.R S., University, Melbourne ...	2
Sir A. J. Arbuthnot, K.C S.I., Newbury, England	79
W. G. Head, Esq., Horticultural Department, Crystal Palace, London	2
Dr. M. Foster, M.D., F.R.S., &c., Cambridge, England ...	12
„ Maxwell Masters, M D., F.R.S., London	12
„ R. Baumgaten Djoejacarta, Java	1
George F. Wilson, Esq., Weybridge Heath, London ...	50
Colonel Trevor Clarke, South Kensington, London ...	72
Dr. J. B. Balfour, F.R.S., Professor of Botany, Oxford ...	21
Captain W. J. Elwes, Cirencester	36
„ Symons, S. S. *Pekin*	408
Miss Fletcher, St. Thomas' Home	80
Revd. A. Seacome, Breconshire	80
H. Franklin, Esq., St. Hilary, Cambridge	12
William Brockbank, Esq., F.L.S., Manchester	9
George Well Campbell, Esq., Lockerbie	4
A. Forbes, Esq., Aberdeen	10
J. Gammie, Esq., ditto	13
David Prain, Esq., Fettercairn, Laurencebirk	7
H. C. Levinge, Esq., Knock Drin Castle, Ireland	25
Hon'ble J. Brossisto, M.P., Melbourne	2
M. S. G. Despeissiez, Mauritius	5
J. A. Campbell, Esq., Ceylon	1
Deputy Commissioner, Arrakan Hill Tracts	3
Ditto, Sultanpur	1
Ditto, Ellichpur	14
Conservator of Forests, Rangoon	2
Ditto, N. Circle, Madras	1
Ditto, Bengal	1
Ditto, Assam	1
Deputy Conservator of Forests, Chittagong	10
Ditto ditto, Ranchee	1
Ditto ditto, Buxa	1
Ditto ditto, Teesta Division	1
Assistant Conservator of Forests, Ajmere	2
Ditto ditto, Kurseong	1
Officiating Conservator of Forests, Pegu Circle, Rangoon ...	1
E. H. Man, Esq., Andamans	1

APPENDIX IV—*contd.*

To whom sent.	Number of parcels or packets.
C. Maries, Esq., Durbhunga	24
His Excellency The Right Hon'ble M. E. Grant Duff, Madras	12
Surgeon-General Bidie, C.S.I., Madras	18
A. O. Hume, Esq., C.B., Simla	112
M. R. Weld, Esq., Kistna, Madras	29
J. Gammie, Esq., Mungpoo	1
R. Pantling, Esq., ditto	5
A. F. Dowling, Esq., Kurnafuli	1
Manager, Oodaleah Tea Estate, Chittagong	1
Ditto, New Terai Tea Association, Siliguri	1
Ditto, Gangaldai Factory, Bhagalpore	1
Ditto, Soolahera Estate, Mysore	1
Ditto, Harsingpore Indigo Concern, Tirhoot	1
A. M. G. Smith, Esq., Nuddea	1
Edward Hall, Esq., Mysore	1
Executive Engineer, Public Works Department, Chittagong ...	1
District Engineer, Rungpore	2
Ditto, Mymensingh	1
Engineer-in-Chief, Dacca-Mymensingh State Railway, Dacca	6
Assistant Engineer, Public Works Department, Kistna ...	92
Secretary, Eurasian and Anglo-Indian Association, Madras ...	7
Ditto and Engineer, Akyab Municipality, Akyab ...	2
Ditto to the Calcutta Exhibition, Melbourne ...	48
Honorary Secretary, Moradabad Club	1
Superintendent, Cantonment Garden, Rangoon	1
Sub-divisional Officer, Alipur Duar	1
H. Inglis, Esq., Akyab	6
A. East, Esq., Mercara	1
Colonel Timler, Russian Army	4
Consul for Portugal in British India, Bombay	1
Dr. T. E. B. Brown, M D., Medical School, Lahore ...	20
Thomas Wardle, Esq., Leek, Staffordshire	45
J. Collet, Esq., Srinagar	1
The Commissioner of Bhagulpore	1
Y. B. Lewis, Esq., Purneah	1
J. Jarbo, Esq., Rungpore	173
G. A. Vallenti, Esq., Ranchee	1
Director of Agriculture, Assam	4
R. B. Moybe, Esq., Kohima	201
T. Norman, Esq., Mozufferpore	1
James Anderson, Esq., Berhampore	1
P. H. Brown, Esq., Cocanada	2
G. S. Tilly, Esq., Parasnath	22
H. Wylly, Esq., Mourbhanj, Orissa	1
C. Prentis, Esq., M.D., Civil Surgeon, Gorakhpore	1
Thomas Barnard, Esq., Buxar	1
J. D. Beglar, Esq., Chinsurah	1
Colonel J. Miller, Commanding Bhopal Battalion, Sehore ...	38
„ J. Upperton, United Service Club, Calcutta ...	27
„ Talbot, Political Agent, Bikaneer	2
Messrs. Jardine, Skinner and Company, Calcutta	1
„ Stanley, Price and Company, Calcutta	98
Messrs. Schoene, Kilburn and Company, Calcutta	1
Bengal Store Company, Calcutta	1
L. P. D. Broughton Esq., ditto	1
Major J. Colquhoun, R.A., Dum-Dum	2
J. A. Crawford, Esq., Calcutta	1
M. Harmand, Consul-General for France, Calcutta ...	12
M. leChivaliar J. Gallian, Calcutta	12
C. C. Khambatta, Esq., Canning Town	1
P. Playfair, Esq., Calcutta	2
L. A. Smith, Esq., ditto	2
H. D. Yule. Esq., ditto	1
Halfdan Bahr, Esq., Curator, Royal Botanic Garden ...	61
Pundit Jwala Duttee, Lahore	1
Badun Nuskar, thana Makooah	1
Bazit Kazie, ditto	1
Babu Bissumbhur Ghosh	1
„ Brojendra Coomar Sein, Paikpara	1

APPENDIX IV—*concluded.*

To whom sent.	Number of parcels or packets.
Baboo Haran Chandra Chatterjee, Overseer, Pegu Division ...	12
„ Hari Mohun Moitra, Maldah	1
Hurry, Nurseryman, Calcutta	1
Babu Khetttra Mohun Dutta, Calcutta	1
„ Poorna Chunder Roy Chowdhury, Mymensing ...	3
Rai Prosonno Kumar Banerjee, Bahadur, Calcutta ...	12
Babu Prosono Coomar Sein, Seebpore	1
„ Protap Narain Sing, Bankoorah	1
„ Protap Chandra Ghosh, Calcutta	1
„ Tacoor Dass Banerjee, ditto	1
Total ...	3,292

R. D'R.—Reg. No. 1849J—325—22-5-86.

MUNICIPAL DEPARTMENT.

MEDICAL.

DARJEELING, THE 22ND JUNE 1886.

RESOLUTION.

READ—

The Annual Report of the Royal Botanic Garden, Calcutta, for the year 1885-86.

The establishment were engaged in keeping up as high a standard of cultivation and arrangement as possible amongst the plants in the conservatories and grounds. The show of orchids was excellent, and the general appearance of the garden was very satisfactory. The river frontage, which had suffered from erosion, was protected by a facing of broken brick metal, and is now considered fairly secure.

2. A large quantity of mahogany seed was received during the year from Kew and Jamaica. Much of this was distributed, and the remainder having been sown in the garden, yielded about 20,000 seedlings. Other timber plants of useful sorts were grown for distribution. Dr. King reports that a year's further experience confirms him in the belief that the paper mulberry tree (which supplies the material from which the *tappa* cloth of Polynesia and the bulk of the paper of China and Japan are manufactured) finds a congenial soil in Bengal. The bark of this plant is considered by English paper-makers to be nearly the best of paper fibres. The utilization of the fibre of the common plantain for paper making has been rendered possible by the invention of a machine patented by a retired officer of the Madras Army.

3. The herbarium attached to the garden received material additions during the year. Valuable specimens were contributed by Mr. Kunstler from Malaya, by Mr. Pantling from the Eastern Himalayas, by Mr. Duthie from Kumaun, by Mr. Gamble from Madras, and by Messrs. Clarke and Mann from Assam and the Khasia Hills. Interesting contributions were also received from Mr. Boissier, Sir J. Hooker, Mr. Talbot (Canara Forests), Mr. Ellis (Chittagong Hill Tracts), Baron Von Mueller of Melbourne, Professor Engler of Breslau, Dr. Cooke (Poona), Dr. Giles, the Naturalist with the Gilgit Expedition, Dr. Treub (Java), Mr. Cartes (Penang), Mr. Hallett (Singapore), Mr. Campbell (Manbhoom), and Major Sedgewick.

4. Fifty-three thousand seven hundred and fifty-two plants were issued and 9,251 plants were received during the year; 3,292 packets of seeds were distributed and 914 packets were received.

5. The Lloyd Botanic Garden at Darjeeling is reported to be recovering from the ravages of the cockchaffer grubs. The landslips from the Sanitarium Hill, which used to cause much damage, have ceased. Dr. King was in communication with the Darjeeling Municipality for the resumption of the plot of land situated between the Eden Sanitarium and the Botanic Garden, to be worked as a vegetable garden for the benefit of the station.

6. The expenditure on the Calcutta Botanic Garden amounted to Rs. 69,870, there being a set-off of Rs. 1,091 realized from the sale of surplus plants. The expenditure on the Lloyd Botanic Garden at Darjeeling amounted to Rs. 7,372, while the sale of surplus plants yielded Rs. 741.

ORDER.—Ordered that a copy of this Resolution and of the Report be submitted to the Government of India, in the Revenue and Agricultural Department, for information.

Ordered, also, that a copy of this Resolution be forwarded to the Superintendent of the Botanical Gardens for information.

By order of the Lieutenant-Governor of Bengal,

R. H. WILSON,

Offg. Secretary to the Government of Bengal.

No. 1094T—M.

Copy forwarded to the Superintendent of the Botanical Gardens, Calcutta, for information.

By order of the Lieutenant-Governor of Bengal,

E. N. BAKER,

Under-Secretary to the Government of Bengal.

Darjeeling,
The 22nd June 1886.

B. P.—Reg. No. 454T—141—21-6-86.